Appl. No. 10/618,885
Amdt. Dated 12/16/2004
Reply to Office Action of 08/16/2004

REMARKS

This paper is in response to the Office Action mailed on 08/16/2004. In the Office Action, (i) claims 31-36 and 40-51 were rejected under 35 U.S.C. § 102(e); and (ii) claims 37-39 were rejected under 35 U.S.C. § 103(a). Reconsideration of the rejections in light of the amendments and remarks made herein is respectfully requested.

Claims 31-51 were previously pending. Claims 31, 34, 37-38, 41, and 44 have been amended by this response. Claims 52-55 have been added. No claim has been cancelled. Accordingly, claims 31-55 are now pending in this application. Of the pending claims, claims 31, 37, 41, and 47 are independent claims.

Applicant believes that no new matter has been added by this response.

I) Specification Amendments

Applicant has amended the section CROSS REFERENCE TO RELATED APPLICATION in order to update the status of the parent patent application to which this divisional patent application claims priority. The parent patent application, Serial No. 09/749,074, has issued into U.S. Patent No. 6,622,227.

Applicant has further amended a paragraph of the detailed description to correct the incorrect reference number "340" to -350-- and to parenthetically insert the reference labels used in Figure 3 of the drawings with the reference numbering.

Applicant respectfully submits that no new matter has been added by these amendments to the specification.

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II) Claim Rejections Under 35 U.S.C. § 102(e)

Claims 31-36 and 40-51 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,449,679 issued to Kevin J. Ryan ("Ryan"). [Office Action, Page 2, Section 4]. Applicant respectfully traverses this rejection.

Independent claims 31 and 41 have been amended to clarify Applicant's claimed invention.

Regarding independent claims 31, 41, and 47, the Office Action alleges that "Ryan discloses the invention as claimed". [Office Action, page 2, section 4, line 3]. Applicant respectfully disagrees.

The Office Action alleges that Ryan discloses "the memory control translator does synchronize commands, data, and addresses between the memory control unit and the system memory (Abstract and Col 1 Line 65 to Col 2 Line 37)." [Office Action, page 2, section 4, lines 8-10]. However, in Ryan's Abstract and in Ryan's Summary of the Invention at Ryan's Col. 1, Line 65 to Ryan's Col. 2, Line 37 it appears that only translating packet based RDRAM protocol into an SDRAM protocol is discussed without any specificity as to synchronization of commands, data, and addresses.

Applicant respectfully submits that Ryan does not disclose a "memory control translator to synchronize commands, data and addresses between the memory control unit and the system memory to send a buffered write command and its corresponding write data to the system memory for execution upon receipt of another write command from the memory control unit, without waiting for write data associated with the another write command to arrive

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from the memory control unit" as recited in Applicant's amended claims 31 and 41. [Claim 31, lines 22-29; Claim 41, lines 22-29].

Therefore for the foregoing reasons, Applicant respectfully submits that Ryan does not anticipate independent claims 31 and 41.

Regarding independent claim 47, Applicant respectfully submits that Ryan does not disclose Applicant's column address buffer and row address buffer.

The Office Action alleges that Ryan's "address buffer does buffer column and row addresses (see Col 5 Lines 39-47)" that it discloses [Office Action, page 3, section 4B]. Applicant respectfully disagrees.

Applicant cannot find support for a row address and a column address in Ryan at Col 5 Lines 39-47 cited by the Office Action. As illustrated in Ryan's Figure 4, Ryan seems to perform address translation at blocks 146 and 158 prior to address storage in Ryan's command/control & address FIFO 152.

Moreover, Ryan's command/control & address FIFO 152 illustrated in Ryan's Figure 4 does not disclose a separated column address buffer and row address buffer to respectively store column addresses and row addresses.

That is, Applicant respectfully submits that Ryan does not disclose "a column address buffer coupled between the RDRAM memory interface and the SDRAM memory interface, the column address buffer to store one or more column addresses corresponding to memory locations associated with the data stored in the write data buffer and the read data buffer; and a row address buffer coupled between the RDRAM memory interface

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and the SDRAM memory interface, the row address buffer to store one or more row addresses corresponding to the memory locations associated with the data stored in the write data buffer and the read data buffer" as recited in Applicant's independent claim 47. [Claim 47, lines 21-31]

Therefore for the foregoing reasons, Applicant respectfully submits that Ryan does not anticipate independent claim 47.

Dependent claims 32-36 and 40 depend directly or indirectly from independent claim 31. Dependent claims 42-46 depend directly or indirectly from independent claim 41. Dependent claims 48-51 depend directly or indirectly from independent claim 47.

Applicant believes it has placed independent claims 31, 41, and 47 in condition for allowance such that the dependent claims depending respectively there-from with further limitations are also in condition for allowance.

Accordingly, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 102(e) rejection of claims 31-36 and 40-51 over Ryan.

III) Claim Rejections Under 35 U.S.C. § 103(a)

Claims 37-39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ryan in view of U.S. Patent No. 5,666,494 issued to L. Randall Mote, Jr. ("Mote"). [Office Action, Page 4, Section 6]. Applicant respectfully traverses this rejection.

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Claim 37 has been amended into independent form including
the previous limitations of the base claim, claim 31, from which
it depended.

The Office Action admits, "Ryan does not disclose the
claimed read bypass" [Office Action, page 4, line 6]. Instead,
the Office Action relies on Mote in an attempt to fill this
missing element into Ryan.

In Applicant's claimed invention of claim 37, a multiplexer
is coupled to the at least one data buffer so that "the
multiplexer [can] select *data* from the at least one data buffer
in response to the at least one address comparator." (emphasis
added) [Claim 37, lines 27-30}.

However, Mote's multiplexer (MUX) 190 cited to by the
Office Action in Mote at Col. 9, lines 29-54 is an address
multiplexer to multiplex address information and not a data
multiplexer to multiplex data. In Mote, "read/write address
mutliplexer (MUX) 190 [] receives address information from the
output of the posted write FIFO buffer 184 during write accesses
and [] receives address information from the system bus 125
during read accesses." [Mote, Col. 9, lines 48-52].

Moreover, Mote's multiplexer 190 is used to support Mote's
"read-around mode". [Mote, Col. 9, lines 47-48]. Typically in
Mote's "read-around mode", the "memory controller 182 gives read
access request on the system bus 125 priority over pending
posted writes. That is if a read request is pending when a
current access is completed, read access is performed regardless
of whether a posted write is pending". [Mote, Col. 9, lines 34-
38].

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The exception to <u>Mote</u>'s "read-around mode" is when "the read access request is directed to the same address location as a posted write". [<u>Mote</u>, Col. 9, lines 38-40]. In one case, <u>Mote</u>'s "posted write buffer [184] is flushed to write the write data to the DRAMs 135". [<u>Mote</u>, Col. 9, lines 43-44]. Alternatively in <u>Mote</u>, the "read request is satisfied by outputting the requested data from the posted write buffer 184". [<u>Mote</u>, Col. 9, lines 45-46]. However in this case, <u>Mote</u>'s multiplexer 190 appears not to be used in support of this exception as <u>Mote</u>'s posted write buffer 184 is directly coupled to the data bus 156 of the system bus 125.

Thus, <u>Mote</u> also does not disclose a multiplexer that is "respons[ive] to the at least one address comparator" as recited in claim 37. [Claim 37, lines 29-30].

For the foregoing reasons, Applicant respectfully submits that the combination of <u>Ryan</u> and <u>Mote</u> does not make obvious independent claim 37.

Claims 38-39 depend directly or indirectly from independent claim 37.

Applicant believes it has placed independent claim 37 in condition for allowance such that dependent claims 38-39 depending respectively there-from with further limitations are also in condition for allowance.

Applicant respectfully requests that the withdrawal of the 35 U.S.C. § 103(a) rejection of claims 37-39 over the combination of <u>Ryan</u> and <u>Mote</u>.

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IV) New Claims

Applicant has added new dependent claims 52-55.

New claims 52-53 depend directly or indirectly from independent claim 41. New claims 54-55 depend directly or indirectly from independent claim 47.

Applicant believes it has placed independent claims 41 and 47 in condition for allowance such that new dependent claims 52-53 and 54-55 depending respectively there-from with further limitations are also in condition for allowance. Applicant respectfully submits that new claims 52-55 are in condition for allowance.

V) Other Claim Amendments

Applicant has amended dependent claims 34, 38, and 44 to replace the word "for" with --to-- and correct the according grammar of the claim elements. These amendments avoid a narrowing interpretation of the elements as "means-for" limitations. These amendments were not made to narrow the claim scope for patentability reasons but to broaden the claim scope.

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CONCLUSION

Reconsideration of the pending claims in the application is respectfully requested. Allowance of the claims at an early date is solicited.

The Examiner is invited to contact Applicant's undersigned counsel by telephone at (714) 557-3800 to expedite the prosecution of this case should there be any unresolved matters remaining.
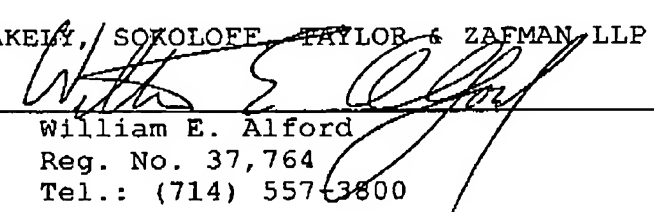
To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees in connection with the filing of this paper, including extension of time fees, to Deposit Account 02-2666 and please credit any excess fees to such deposit account.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP

Dated: December 16, 2004   By _____

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CERTIFICATE OF FACSIMILE TRANSMISSION
I hereby certify that this correspondence is being transmitted via facsimile to the Patent and Trademark Office under 37 CFR §1.8 on: December 16, 2004 to Examiner Kevin Ellis at (703) 872-9306

12/16/04

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William Alford   *Date*

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